

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 2001-NE-25-AD; Amendment 39-12734; AD 2002-09-01]

RIN 2120-AA64

Airworthiness Directives; Pratt & Whitney 4000 Series Turbofan Engines

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

SUMMARY: This amendment adopts a new airworthiness directive (AD), that is applicable to Pratt & Whitney (PW) PW4090, PW4090-3, PW4074D, PW4077D, PW4090D, and PW4098 turbofan engines with 15th stage high pressure compressor (HPC) disks having certain part numbers (P/N's). This amendment requires initial and repetitive borescope inspections of 15th stage HPC disks for cracks in the knife edges, eddy current inspections (ECI's) of blade loading slots if required, and removal of cracked disks. In addition, this amendment requires the removal from service of these P/N disks, at a new lower cyclic life limit. This amendment is prompted by two reports of 15th stage HPC disks with cracks in the outer rim front rail of the blade loading slots, and in the front forward and middle knife edges. The actions specified by this AD are intended to prevent 15th stage HPC disk failures from cracks, which could result in an uncontained engine failure.

DATES: Effective date June 6, 2002. The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of June 6, 2002.

ADDRESSES: The service information referenced in this AD may be obtained from Pratt & Whitney, 400 Main St., East Hartford, CT 06108; telephone (860) 565-6600, fax (860) 565-4503. This information may be examined, by appointment, at the Federal Aviation Administration (FAA), New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

FOR FURTHER INFORMATION CONTACT: Jason Yang, Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park; telephone (781) 238-7747, fax (781) 238-7199.

SUPPLEMENTARY INFORMATION: A proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) to include an AD that is applicable to PW4090, PW4090-3, PW4074D, PW4077D, PW4090D, and PW4098 turbofan engines with 15th stage high pressure compressor (HPC) disks having certain P/N's, was published in the Federal Register on November 23, 2001 (66 FR 58689). That action proposed to require initial and repetitive borescope inspections of 15th stage HPC disks for cracks in the knife edges, eddy current inspections (ECI's) of blade loading slots if required, and removal of cracked disks. In addition, that action proposed to require the removal from service of these P/N disks, at a new lower cyclic life limit. The proposed actions were to be done in accordance with the Accomplishment Instructions of PW Service Bulletin PW4G-112-A72-242, dated May 1, 2001.

Comments

Interested persons have been afforded an opportunity to participate in the making of this amendment. Due consideration has been given to the comments received.

One commenter requests that in the paragraph entitled "Differences Between this AD and Manufacturer's Service Information" the sentence stating that PW has informed the FAA that to help reduce the operators' cost of replacing disks, PW may supply replacement disks at no cost, to be installed at the time disks with more than 2,000 cycles-since-new (CSN) are removed for maintenance, be deleted.

The FAA agrees. Although this cost reduction information was supplied by the manufacturer for the proposed rule, the purposes of this AD are to mandate initial and repetitive inspections for cracks, and to establish a lower life limit for the disk. The replacement of disks with more than 2,000 CSN when in the shop was determined based on economic consideration, and is not a hard time limit for the disk. Therefore, to avoid confusion, the cost reduction information is removed from this final rule.

One commenter requests that a typographical error be corrected in the paragraph entitled "Manufacturer's Service Information" from 8,000 hours CSN, to 8,000 CSN.

The FAA agrees that the sentence does contain a typographical error, however, the final rule does not contain the paragraph referred to and is not affected.

After careful review of the available data, including the comments noted above, the FAA has determined that air safety and the public interest require the adoption of the rule as proposed.

Economic Analysis

There are approximately 160 PW4090, PW4090-3, PW4074D, PW4077D, PW4090D, and PW4098 turbofan engines of the affected design in the worldwide fleet. The FAA estimates that 70 engines installed on airplanes of U.S. registry would be affected by this AD. The FAA also estimates that it would take approximately 2.5 work hours per engine to accomplish an initial borescope inspection, and that the average labor rate is \$60 per work hour. Required parts for a borescope inspection would cost approximately \$9 per engine. Based on these figures, the total cost for the initial borescope inspection for U.S. operators is estimated to be \$11,130. Assuming that all 70 engines would require 15th stage HPC disk replacement, and that a replacement disk costs approximately \$65,000, the total disk cost of the AD on U.S. operators is estimated to be \$4,550,000.

Regulatory Analysis

This final rule does not have federalism implications, as defined in Executive Order 13132, because it would not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. Accordingly, the FAA has not consulted with state authorities prior to publication of this final rule.

For the reasons discussed above, I certify that this action (1) is not a "significant regulatory action" under Executive Order 12866; (2) is not a "significant rule" under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and (3) if promulgated, will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act. A final evaluation has been prepared for this action and it is contained in the Rules Docket. A copy of it may be obtained by contacting the Rules Docket at the location provided under the caption ADDRESSES.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (14 CFR part 39) as follows:

PART 39—AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

Sec. 39.13 [Amended]

2. Section 39.13 is amended by adding a new airworthiness directive to read as follows:

AIRWORTHINESS DIRECTIVE

Aircraft Certification Service
Washington, DC



U.S. Department
of Transportation
**Federal Aviation
Administration**

We post ADs on the internet at "www.airweb.faa.gov/rgl"

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference 14 CFR part 39, subpart 39.3).

2002-09-01 Pratt & Whitney: Amendment 39-12734. Docket No. 2001-NE-25-AD.

Applicability: This airworthiness directive (AD) is applicable to Pratt & Whitney (PW) PW4090, PW4090-3, PW4074D, PW4077D, PW4090D, and PW4098 turbofan engines with 15th stage high pressure compressor (HPC) disks part numbers (P/N's) 56H015 or 57H715. These engines are installed on, but not limited to Boeing 777 airplanes.

Note 1: This AD applies to each engine identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For engines that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (c) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance: Compliance with this AD is required as indicated, unless already done.

To prevent 15th stage HPC disk failures from cracks, which could result in an uncontained engine failure, do the following:

Initial Inspection

(a) Perform an initial inspection for cracks in the front rail of the blade loading slots and front forward and middle knife edges of the 15th stage HPC disk, and replace disk in accordance with paragraphs 1.A. through 1.E.(4) of, "For Engines Installed on Aircraft"; or paragraphs 2.A. through 2.E.(4) of, "For Engines Removed From the Aircraft", of the Accomplishment Instructions of PW Service Bulletin PW4G-112-A72-242, dated May 1, 2001, and the following Table 1:

Table 1.—15th Stage HPC Disk Initial Inspection

Action	If:	Then:
(1) Borescope-inspect disk, within 4,600 cycles-since-new (CSN) or before 90 days after the effective date of this AD, whichever occurs later.	(i) Borescope inspection shows a crack in any knife edge area.	Replace the disk with a serviceable disk before further flight.
	(ii) Borescope inspection shows a suspect crack in any loading slot.	Perform an eddy current inspection (ECI) to confirm crack within the next 25 cycles-in-service (CIS), and if cracked replace with a serviceable disk before further flight.

Repetitive Inspections

(b) Perform repetitive inspections in accordance with the inspection procedures in paragraph (a) of this AD at intervals of no more than 1,000 CIS since the last inspection.

New Cyclic Life Limit

(c) This AD establishes a new cyclic life limit for 15th stage HPC disks P/N's 56H015 and 57H715 of 8,000 cycles-since-new (CSN). Thereafter, except as provided in paragraph (d) of this AD, no alternative cyclic life limit may be approved for 15th stage HPC disks P/N's 56H015 and 57H715.

Alternative Methods of Compliance

(d) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Engine Certification Office (ECO). Operators must submit their request through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, ECO.

Note 2: Information concerning the existence of approved alternative methods of compliance with this airworthiness directive, if any, may be obtained from the ECO.

Special Flight Permits

(e) Special flight permits may be issued in accordance with Secs. 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the aircraft to a location where the requirements of this AD can be done.

Documents That Have Been Incorporated by Reference

(f) The inspections must be done in accordance with PW Service Bulletin PW4G-112-A72-242, dated May 1, 2001.

This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from Pratt & Whitney, 400 Main St., East Hartford, CT 06108; telephone (860) 565-6600, fax (860) 565-4503. This information may be examined, by appointment, at the FAA, New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA.; or at the Office of the Federal Register, 800 North Capitol Street, NW, suite 700, Washington, DC.

Effective Date

(g) This amendment becomes effective on June 6, 2002.

Issued in Burlington, Massachusetts, on April 18, 2002.

Francis A. Favara,

Acting Manager, Engine and Propeller Directorate, Aircraft Certification Service.

[FR Doc. 02-10274 Filed 5-1-02; 8:45 am]

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